

## CLAIMS

### WHAT IS CLAIMED IS:

1. A genetically engineered mammalian cell that has  
5 been mutated by a process comprising the insertion of a  
recombinantly manipulated polynucleotide sequence into a  
gene in said genetically engineered mammalian cell wherein  
said gene is identifiable as corresponding to at least one  
of SEQ ID NOS: 1-574.

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2. The genetically engineered mammalian cell of  
Claim 1, wherein said cell is murine.

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3. A cell according to Claim 2, wherein said cell is  
an embryonic stem cell.

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4. The genetically engineered mammalian cell of  
Claim 1, wherein said polynucleotide sequence is present  
on a viral vector.

5. A cell according to Claim 4, wherein said viral  
vector is a retroviral vector.

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6. A cell according to Claim 4, wherein said viral  
vector additionally comprises regions of targeting DNA  
that facilitate gene targeting by homologous  
recombination.

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7. An isolated murine embryonic stem cell line  
comprising an engineered retroviral gene trap vector in at  
least one gene comprising a polynucleotide sequence first  
disclosed in one of SEQ ID NOS: 1-574.